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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/743,476
Filing Date: December 23, 2003
Appellant(s): LEE ET AL.

Paul J. Farrell
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 07/07/2008 appealing from the Office action mailed 02/07/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,400,996	Hoffberg	6-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-7, 109-141 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoffberg et al. (hereinafter Hoffberg) U.S. Patent No. 6400996 issued June 4, 2002.

In regard to claims 1-7 and 109-121, claims 1-7 and 109-121 reflect the interface comprising computer readable instructions for performing the method steps of claims 122-141, respectively, and are rejected along the same rationale.

In regard to **Independent claim 122,** Hoffberg teaches a method for a proactive interaction between a user and a computational device through a user interface, the computational device having an operating system, the method comprising:

- Detecting a pattern of user behavior according to at least one interaction of the user with the user interface by using a learning module (See column 10, lines 15-31 and several incorporate pattern recognition patents (See column 42, lines 20-67 and column 50, lines 50-67)).
- Proactively altering at least one function of the user interface according to said pattern (See Figure 15, and column 85, lines 5-67). Hoffberg teaches an interface that the user interacts with and that the system modifies based on the detected input pattern

With respect to **dependent claim 123,** Hoffberg teaches the method wherein said at least one pattern is selected from the group consisting of a pattern determined according to at least one previous interaction of the user with said user interface, and a predetermined pattern, or a combination thereof (See column 51, lines 7-15).

With respect to **dependent claim 124,** Hoffberg teaches the method wherein said user interface features a graphical display and said altering at least one function of said user interface comprises altering at least a portion of said graphical display (See Figure 15 and column 51, lines 55-67 and column 52, lines 35-45).

With respect to **dependent claim 125,** Hoffberg teaches the method wherein said altering at least a portion of said graphical display comprises:

selecting a menu for display according to said detected pattern; and displaying said menu (See column 144, lines 25-42 and Figure 15 and column 90, lines 20-40).

With respect to **dependent claim 126,** Hoffberg teaches the method wherein said selecting said menu comprises: constructing a menu from a plurality of menu options (See column 116, lines 15-67 and Figures 15-18).

With respect to **dependent claim 127,** Hoffberg teaches the method wherein said user interface

features an audio display and said altering at least one function of said user interface comprises altering at least one audible sound produced by the computational device (See column 60, lines 59-67, column 94, lines 43-65 and column 119, lines 20-67).

With respect to **dependent claim 128,** Hoffberg teaches the method wherein the computational device is selected from the group consisting of a regular computer, an ATM, a cellular telephone, a mobile information device, a PDA, or a consumer appliance having an operating system (See column 51, lines 40-45, column 39, lines 35-45 and column 147, lines 30-35).

With respect to **dependent claim 129,** Hoffberg teaches the method wherein said learning module comprises a knowledge base, and the method further comprises holding information gathered as a result of interactions with the user and/or the operating system by using said knowledge base (See Figure 18, 1807 and column 117, lines 20-67).

With respect to **dependent claim 130,** Hoffberg teaches the method wherein said knowledge base comprises a plurality of integrated knowledge determined from the behavior of the user and from preprogrammed information (See column 56, lines 40-51).

With respect to **dependent claim 131,** Hoffberg teaches the method wherein said learning module further comprises a plurality of sensors, and uses said sensors to perceive a state of the operating system (See column 99, lines 1-15 and 40-55).

With respect to **dependent claim 132,** Hoffberg teaches the method wherein said learning module further comprises a perception unit, and uses said perception unit to process output from said sensors and determine a state of the operating system and a state of said user interface (See figures 15-18 and column 50, lines 50-67 and column 125, lines 30-67).

With respect to **dependent claim 133,** Hoffberg teaches the method wherein said learning module further comprises a reasoning system, and uses said reasoning system to update said knowledge base and learn an association between an alteration of said user interface and a state of the operating system (See column 126, lines 44-67 and Example 12, column 119).

With respect to **dependent claim 134,** Hoffberg teaches the method wherein said learning

module further comprises at least one of an artificial intelligence algorithm and a machine learning algorithm, and the method is performed by the learning module (See column 42, lines 27-67 and column 132, lines 10-20).

With respect to **dependent claim 135,** Hoffberg teaches the method wherein said learning module maximizes a percentage of proactive alterations leading to a direct user selection from said alteration (See column 51, lines 63-67 and 52, lines 1-26).

With respect to **dependent claim 136,** Hoffberg teaches the method wherein said maximization is performed through learning reinforcement (See column 51, lines 63-67 and 52, lines 1-26 and column 55, lines 58-67 and column 56, lines 1-22).

With respect to **dependent claim 137,** Hoffberg teaches the method wherein said learning reinforcement is performed through an iterative learning process (See column 51, lines 63-67 and 52, lines 1-26 and column 55, lines 58-67 and column 56, lines 1-22).

With respect to **dependent claim 138,** Hoffberg teaches the method wherein each iteration of said learning process is performed after said alteration has been performed (See column 53, lines 19-40 and Examples 12-14).

With respect to **dependent claim 139,** Hoffberg teaches the method wherein said proactively altering at least one function of said user interface comprises activating an additional software application through the operating system (See column 131, medial devices that interact with the system have additional software installed to measure the bio feeds of the user.)

With respect to **dependent claim 140,** Hoffberg teaches the method wherein the method is performed using an intelligent agent capable of communicating with a human user (See example 12-14, column 119-120.

With respect to **dependent claim 141,** Hoffberg teaches the method wherein said intelligent agent controls at least one interaction of the computational device over a network (See Examples 12-14 and Example 17, column 125-126).

(10) Response to Argument

Beginning on page 11 of Appellant's brief (hereinafter Brief), Appellant argues specific issues, which are accordingly addressed below. Appellant has elected the grouped claims and not argued the claims individually and thus the Examiner will present arguments based on the grouped claims.

Claims 1-7 and 109-141

Appellant's argument that the prior art of Hoffberg does not teach the claim limitation recited in claim 1 and 122

Appellant argues that the prior art of Hoffberg does not teach the "proactive altering of at least one function of said interface unit according to detected pattern" because it appears the Appellant does not interpret the function cited in Hoffberg where providing of frequently used choices for program selections, alters the interface (See Brief page 11, middle).

The Examiner respectfully disagrees.

First, as a matter of clarity the Examiner refers to the final rejection mailed 8/29/2008 (page 3, middle) and notes that in the rejection the Examiner not only cited column 85, lines 5-67 but also cited column 50, lines 50-67 and column 42, lines 20-67. The incorporated patents in column 42 will be discussed below in the second argument.

Turning to the first argument, the office position is that Hoffberg teaches an adaptive interface that predicts the desired user function by monitoring the user's history, interface context and machine status (See abstract) and then

changes the interface based on the predicted function. Further Hoffberg teaches that a pattern recognition system is used for a multimedia device where the pattern recognition is used to study the behavior of the user, the user's mood as well as the preferences of the users to determine the familiarity with the operation and functionality of the system. The purpose of the pattern recognition **is to provide a tailored interface adapted to the characteristics of the user** thus adaptively providing access to various features in a hierarchical manner such that the **most likely** feature is presented on the interface rather then the more unlikely feature (See column 97, lines 28-40 and 56-67 and column 98, lines 1-67). The section 97-98 of Hoffberg specifically recites the user interface description used in the preferred embodiments and that a VCR is modeled for program entry.

In the rejection, The Examiner referred to column 85, lines 5-67 as an example of the preferred embodiment VCR program where the specific text recites "the interface system provides an easily accessible CHANGE, CANCEL, or UNDO feature, which facilitates backtracking or **reprogramming the immediately previously** entered information rather then forcing the user to repeat all or substantially all of the programming steps". Therefore, the skilled artisan would determine that a reprogramming of the interface is an altering of at least one function of the interface. In combination with cited feature of tracking and modifying the interface based on "frequently used settings", which is a pattern, the interface is adapted based on "the behavior of use" pattern. It is clear

that the system of Hoffberg detects a pattern of behavior because it tracks frequently used settings and then modifies the interface based on the settings. In combination with the description of the interface example in column 97-98 it is clear that the purpose of Hoffberg's prediction routine is to track the user's history/settings while interacting with the interface to adapt the interface to present likely functions.

As mentioned above, the Examiner also referred to column 50, lines 50-67, which specifically recites that the invention of Hoffberg provides an adaptive interface that changes in response to context, past history and status of the system. The interface provides a predictive algorithm that is modeled after user interactions and the model is adapted to the user pattern. Therefore, as further support, it is shown that the system of Hoffberg is clearly directed to adapting an interface function based on at least one pattern and then altering the interface. The feature of reprogramming the interface is shown for the purposes of presenting the likely feature to the user while they perform the CHANGE, CANCEL or UNDO functions on the interface and the examiner referred to this function in the rejection.

To complete the analysis of the rejection of the entire claim, in the second limitation, the Examiner refers to Figure 15 and column 85, lines 5-67. In figure 15 and the accompanying text (See column 85-87, specifically column 86, lines 1-11 and 49-60) where the predictive function of "analyzing the program sequence to predict the next action" is shown as teaching that the " intelligent

interface stores data concerning programming, user preferences and by means of a logic method the system predicts the entry by a user to generate actions to display to the user". Thus it is shown that the cited section in the final office action has referred to the section of the reference that teaches the claim limitations. It is also shown in column 86, lines 49-60, that accompanies figure 15 that the interface is adapted by using a "teach" mode that acquires the preferences of the user or monitoring actual choices by the user during the operation of the interface to enter in a time into the VCR.

In addition, the present application specification (See PGPUB Para 94-95) states the following:

[0094] The proactive user interface of the present invention is preferably able to control and/or be associated with any type of computational device, in order to actively make suggestions to the user, **based upon prior experience with a particular user and/or various preprogrammed patterns from which the computational device could select, depending upon user behavior**. These suggestions could optionally be made by altering the appearance of at least a portion of the display, for example by changing a menu or a portion thereof; providing different menus for display; and/or altering touch screen functionality. The suggestions could also optionally be made audibly.

[0095] The proactive user interface is preferably implemented for a computational device, as previously described, which includes an operating system. The interface optionally and preferably includes a user interface for communicating between the user and the operating system. The interface is preferably able to detect at least one pattern of interaction of the user with the user interface, for example through operation of a learning module and is therefore preferably able to proactively alter at least one function of the user interface according to the detected pattern.

Therefore, the proactive user interface can anticipate the requests of the user and thereby assist the user in selecting a desired function of the computational device.

Thus, the present application specification defines the predictive altering of the interface to be based on user's behavior and interactions with pre-programmed patterns of the device. In the examples above and the final rejection, it is clear that Hoffberg monitors a users past history of interactions with the VCR and then predicts the next function to present to the user based on the history of interaction with the VCR. By predicting the next function the system is altering the function of the device to allow for the user history of interaction. Thus it appears the structure taught in the present application is shown in the prior art and is the basis for the anticipation rejection presented by the examiner.

Moreover, as background to the argument, Hoffberg states that "intelligent or learning systems are known" (See column 1, lines 30-35) and that "optimization schemes optimize the mechanical elements of the system to provide a universally optimized interface" (See column 2, lines 8-21) are also known. Further, (See the present application specification Para 96 of the PGPUB) where Appellant states that learning algorithms are known in the art. Additionally, Hoffberg shows that the preferred embodiment is to a VCR interface and a programming preference prediction mechanism to alter the interface. Hoffberg shows how the device monitors the users input over time to predict the next function (See column 100, lines 1-21), which was specifically cited by the examiner in the final rejection. Finally, the VCR example provides a smart screen that is an adaptive interface that allows the interface to anticipate or

predict the intent of the user to provide a user choice by default, which is the most likely choice, and then display the choice to the user (See column 11, lines 3-25) and yet another example as to how the teachings of Hoffberg anticipate the claims.

Appellant's argument that the Examiner improperly used two references for a 102 Rejection

Appellant argues that the Examiner refers to a cited section of the reference that shows Incorporated by Reference patents and improperly based the rejection on two references rather than a single reference to anticipate the claims (See Brief page 12).

The Examiner disagrees.

First, the Examiner has reviewed the final rejection and other than mention of column 42, lines 20-67 in the rejection of claim 1 and 122, nowhere in the rejection is there a mention of any reference used in the rejection other than Hoffberg. Further, the rejection of claim 1 does not refer to any specific patent or reference other then Hoffberg. Simply, the rejection is not based on a dual reference rejection it is based on the teachings of Hoffberg as a single reference. As mentioned in the advisory action mailed 04/21/2008 and in the arguments attached to the final rejection mailed the Examiner referred to the section 42, **as a demonstration** to the state of the art and what was known at the time of the filing of Hoffberg, and the references where something for the Appellant to consider. Hoffberg clearly shows that the patents properly incorporated by

reference are relevant to the art of pattern recognition. At the beginning of the background section (See column 1, lines 30-67) Hoffberg clearly states that the incorporate by reference patents are shown to detail how the invention builds on the prior art and how various problems are addressed with intelligent systems and interfaces. Hoffberg specifically states that adaptive and human responsive interface are well known (See column 2, lines 10-16). While the examiner pointed to the incorporated by reference patents, the rejection points only to disclosure of Hoffberg and Hoffberg clearly shows that the prior art as of the filing (Feb 1, 1999) stated that adaptive interfaces are well known and therefore provides a basis that future adaptive interface applications should consider. Therefore, the rejection clearly shows **both** a reference to what the prior art teaches and what is known in the prior art of pattern recognition, and a specific teaching as to the claim limitations within the cited sections of Hoffberg. In summary, the Examiner understands the MPEP section 2131.01 and 2163.07. The examiner did not write a dual rejection or even mention a specific patent in the rejection therefore 2131 is not applicable. Instead the Examiner refers to 2167.07 to show that patents with incorporated by reference patents have material that should be considered as a part of the incorporating reference because incorporated by reference patents provide subject matter that support the written description of the incorporating reference and can be used if the need arises to support a rejection.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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